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(Continued from page 36.)

New Chicago Passenger Terminal of the Chicago and Northwestern Railway, with Especial Reference to the Illuminating Thereof.

[Prepared for the JOURNAL, by MR. C. A. LUTHER.]

News Stand and Checking Rooms.—The news stand and checking rooms, near the entrance to the Annex, or at the northeast corner of the main waiting room, offer ample accommodations to the public.

Dining Room.—Opening from the opposite end of the main room is the dining room, 56 by 70 feet in area. It is an unusually attractive and well appointed room, equal in appearance and arrangement, as well as in service, to the dining rooms of high class hotels. Hung from the heavy coffer ceiling are handsome compo, indirect lighting bowls, equipped with four 250-watt lamps, suspended 12 feet above the floor and spaced 15 feet apart.

Women's Retiring Room.—At this end of the main waiting room, and easily accessible from it also, are the women's retiring rooms, equipped with indirect lighting units like those in the dining room. Adjoining the retiring room is a nursery in charge of trained nurses, where little folk may be cared for and rested while waiting for trains. Near here are also located the matron's room and the emergency room. All these rooms for women open on an attractive gallery, where women and children may sit in quiet seclusion and look down upon the constantly pasing crowds and the delightful play of soft colors in the waiting room below.

Tea Room.—On the third floor, opening off the corridor that leads to the women's retiring and dressing rooms, is a beautiful tea room. In this room the wainscoting is of tile, to the height of the doors, crowned with a decorative tile, with a moss green tile floor. This room is lighted by indirect illumination, from handsome compo bowls, suspended 10 feet above the floor and equipped with four 150-watt lamps in each. The remainder of the third, and all of the fourth floor, which are occupied by the operating offices of the Galena and Wisconsin division, are illuminated from Benjamin clusters of two 40-watt lamps each.

Third Floor Corridor.—The corridors are illuminated by 100-watt lamps, inclosed in alba balls, suspended 12 feet above the floor. They are illuminated in the daytime from large skylights that cover the whole corridor ceiling. The offices on these floors are entirely separated from the rest of the Terminal intended for use of the public. All landings of the different stairways are illuminated from a linolite lamp, equipped with reflectors recessed in the side walls, 18 inches above the floor, and are very effective for lighting the landings. From the side walls of these landings there extend out brackets equipped with 40-watt lamps inclosed in alba bell shades.

The station is equipped with the McFell system of fire alarm and watchman boxes that are connected directly with the city fire alarm system. Vacuum cleaning is used throughout the building.

All dispatchers, superintendents, information bureaus, train announcers, baggage rooms, train shed and mail rooms are equipped with the telautograph system of announcing the arrival of trains and any special information. There are 18 of these machines in use at the present time. A telephone is placed on each telautograph machine, by means of which direct communication may be had with telephone operator at Lake street tower, where connection can be made to various offices and points within the station.

The Concourse.—Between the main waiting room and the trains is the concourse, 316 feet long and 60 feet wide, with ample stairway to Madison street in the center. This concourse is entirely inclosed in glass on 4 sides, the pilasters between the great glass openings, all the architectural features being covered with tile of a delicate color, all capitals and molded courses being of a terra cotta of a dull satin finish, to harmonize with the tiled walls in color.

Stretching away to the north for 900 feet is the main train shed, with its low, umbrella-like roof, and open slots directly above each of the 16 tracks, to carry all smoke and gases from the locomotives out-of-doors. The concourse is illuminated at night time through the medium of 7 fixtures of 13 lights each, 12 100-watt and one 150-watt lamps inclosed in alba bells. These fixtures are suspended 18 feet from the floor, and are spaced 20 feet apart. At the heads of all tracks are train indicators illuminated by 40-watt lamps, and there are posts that are also equipped with a signal system of lamps.

The signal system for starting trains is composed of 2 lights and a push-button at regular intervals on train shed posts, for use of conductors; 2 lights and a push-button near gates for use of gateman, and 3 lights and a push-button on train indicator board at Lake street tower for use of towerman. This signaling system is used for all departing train movements from the depot, whether scheduled, extra or empty.

One minute before the train leaves, the conductor presses the push-button nearest the track from which train is about to leave. This causes the top-light to appear in towermen and gatemen's indicator,

News Stand and Checking Rooms.

Dining Room.

and shows that train is ready to depart on time. When the towerman is ready to handle train he presses his push-button that causes the second light to appear in the tower and gate indicators and top-light in conductor's indicator. At departing time of train the gateman closes gate and immediately presses his push-button, which causes the lower light to appear on conductor's and towerman's indicators. This indicates to the conductor and towerman that all passengers have passed through the gate and that gate is closed. The train may then proceed upon the proper signal from the tower. The train sheds are amply illuminated by 100 and 150-watt lamps spaced every 20 feet apart. These units are equipped with alba bell shades.

All through electric lighted trains, while standing in the train shed, are connected by plugs with terminal electric service. These trains are also connected with the city telephone system up to the last second before they leave. All clocks throughout the terminal are electrically operated from a master clock located in the electrician's office on the fourth floor of the main building.

In, back of the clocks on each side of the terminal, on Washington street, is a small tower equipped with high candle power search lights that throw a powerful beam of light direct to the sky. These are used as signals for the travelers, so they can locate the depot from city through the means of these shafts of illumination.

Around the building, on the curb line, are erected handsome posts for street illumination. There are 61 in all, 8 in front of the depot being equipped with three 150-watt lamps in top ball and 100 watt lamps in the 4 lower ones. The other, or remaining posts, have 4 balls, each equipped with 100-watt tungsten lamps. The mail room on the street level is illuminated through the medium of double tube, Cooper-Hewitt mercury vapor units.

The power house, located a little north of Lake street, is modern in every particular. There are 6 "B & W" water tube boilers, of the vertical header type, set 2 in a battery. They are 800-horse power each, and built for a working pressure of 200 pounds. These boilers are set with a combination of horizontal and vertical passes, and are fired at the drum end. Each boiler is equipped with Foster type superheaters, Green traveling chain, grate stokers and Peck continuous-pivoted, bucket conveyors for handling both coal and ashes. Pan type conveyors are used for carrying coal from cars to the pivoted bucket conveyor, and an inclined pan type conveyor is used to carry ashes to the ash storage bins.

The motive power is as follows: Three vertical, cross-compound, non condensing Allis-Chalmers Corliss engines, of 1,150 indicated horse power, at 100 revolutions per minute, with steam pressure at 155 pounds and 70° F., of superheat. The engines are arranged for direct connection to the dynamos. Space has been left for an additional engine and dynamo unit of the same size. There also is one Curtiss, low pressure turbine, and generator unit of 500-kilowatt capacity, 250 volts, direct current at 1,500 revolutions per minute; space has also been left here for an additional turbine and generator unit of the same capacity.

The electrical machinery consists of 3 direct connected, 100 revolutions per minute, 750-kilowatt 250 volt, continuous current, compound-wound, general electric dynamos, each directly connected to a Corliss engine.

There are 2 motor generator sets, each comprising a 250 volt, direct current motor running 720 revolutions per minute and driving a 500-kilowatt, 6,600-volt alternating current, 3-phase 60-cycle generator, each with its own direct-connected exciter unit. One 3-wire balancer set with a capacity takes care of 300 amperes of unbalanced load.

The switchboard, located on a gallery at the south end of the building, is equipped with bench board for electrical control of all main switching devices, electrically operated motor starters and speed regulators and electrically operated field rheostats, also with momentary contact switches for operating the automatic solenoid switches controlling the station lighting. There is one Worthington, 4,000 square feet condenser, complete, with steam-driven centrifugal, hot well and circulating pumps, and one roof type cooling tower equipped with four motor driven fans.

Air is compressed with 2 imperial type, Ingersoll-Rand, 2-stage air compressors, with cross-compound steam ends, each of a capacity to compress 500 cubic feet of air per minute to 100 pounds pressure. Each is equipped with intercooler, and the system is provided with

Women's Retiring Room.

Tea Room.

AREAS, DIMENSIONS, ETC.

Station building, 320 feet by 218 feet	69,760 square feet
Station yard, 320 feet by 1,072 feet	343,040 " "
Train shed roof	265,800 " "
Right of way acquired	37 acres
Ground area of buildings wrecked	20 "
Number tracks in station yard	16 "
Total legth of yard tracks	14,330 feet
Total capacity of yard tracks	200 cars
Number tracks in station approach	6
Number passenger platforms	8
Width of platforms	16 feet 9 inches
Aggregate length of platforms	7,160 feet
Number of streets bridged	40
Number of alleys bridged	13

QUANTITIES OF WORK.

Excavation for foundations	250,000 cubic yards
Piles driven 43,000	1,500,000 lineal feet
Concrete	275,000 cubic yards
Structural steel	37,000 tons
Waterproofing	665,000 square feet
Conduit pipe	220,000 lineal feet
Curbing	23,000 " "
Cement sidewalk	240,000 square feet
Paving	50,000 square yards
Tracks	18 miles
Single switches	82
Lap switches	4
Double slip switches	39
Crossings	6

[For balance of illustrations, see p. 52.]

an aftercooler. There is a gravity system for oiling by which oil is supplied to all the machinery in the power plant.

The power house chimney is 11 feet internal diameter at the base, and 10 feet 6 inches at the top. It is 245 feet above the boiler room floor and 227 feet above the street level, and is built of Custodis radial brick. Protection against lightning is provided by 4 points, with 24-inch platinum tips, and 2 ¾-inch stranded copper conductors with copper ground plates and a lightning indicator device.

The plant has a present capacity for generating 2,750 kilowatts, which can be increased under the plans to 4,000 kilowatts. The construction of this magnificent terminal was practically started the first of November, 1906, when the preparing of the maps, collecting of data and the making of the preliminary designs were started. Some idea of the extent of the work may be gained from the following work done.

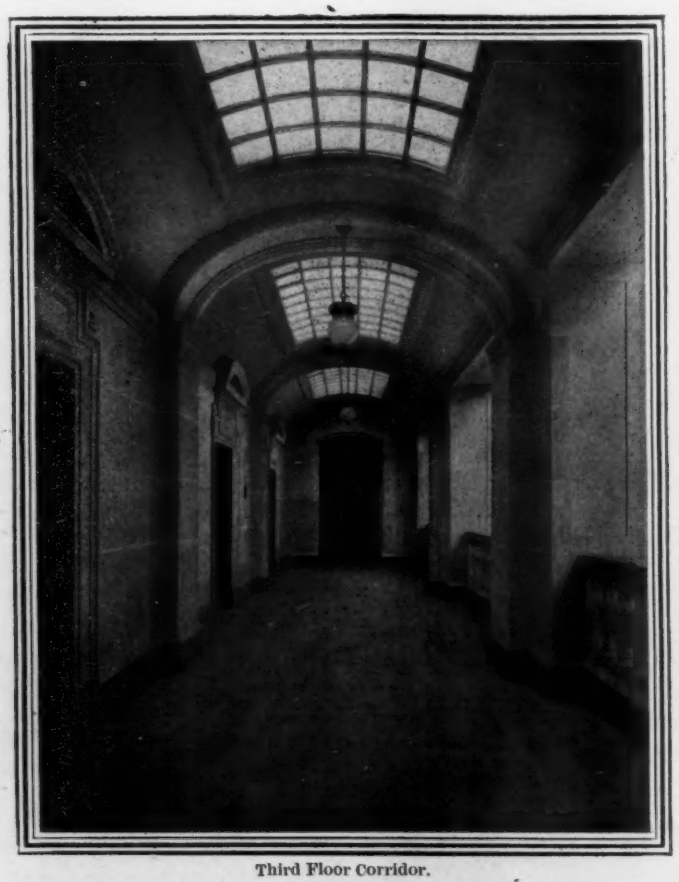
Gas versus Electricity for Street Lighting, London, England.

A statement that was printed in the issue of the *Electrical Review*, Chicago, for the 10th prox., was in effect that the Westminster section of London, as to the contract therefor on public lamps' account, displaced 66 electric arc lamps, but that 1,100 are still in use in the section. Further, that 13,000 additional electric lamps were placed in service in London during 1910. Commenting upon that statement, Mr. F. W. Goodenough, the clever Chief Inspector of the Gas Light and Coke Company, writes as follows, under date of 27th June:

"The statement made in the *Electrical Review* is one of those, which, whilst being perfectly true, does not convey a true impression. The facts are that the Westminster City Council has displaced by high pressure gas lighting all the electric arc lamps in its area in respect of which its contracts with the electric supply company had expired. The arc lamps in question were situated in several of the most prominent thoroughfares in London, such as Regent street, Piccadilly Circus, a portion of Piccadilly, St. James street, and Pall Mall.

"Eleven years ago a contract was entered into for the lighting by electric arc lamps of the portion of the city of Westminster, which is known as the parish of St. George, Hanover square, and abont 1,000 arc lamps were iustalled under that contract, which does not expire until 1931. It is owing to the length of that contract, and for no other reason, that the city of Westminster retained these arc lamps in their service. The City Engineer stated that some few years ago that this electric street lighting contract was costing them £10,000 more per annum than equally effective gas lighting would cost them.

"The additional electric lamps installed in London during 1910 were without (I think) exception, installed in districts where the electric light undertaking is owned by the municipality, and in those cases offers made by this Company which were more favorable to



Third Floor Corridor.

The Concourse.

the ratepayers than the schemes of the municipal electric light undertaking were ignored, in favor of home-made electricity. Whenever there has been fair competition between gas and electricity for street lighting in London, gas has come out on top. We have, during the past few months, secured long period contracts for the installation and up-keep of inverted burner lamps in several of the principal metropolitan boroughs."

THE Allegan (Mich.) gas franchise turmoil has been settled, by ballot of the voters, who recently assented to the one issued by the Councilmen to Messrs. Burrill Tripp, of Allegan, and A. C. Runyan, of South Haven. The grantees propose to put gas also into the settlements of Plainwell and Otsego.

PROCEEDINGS, FURNISHED BY THE SECRETARY.—CONTINUED FROM PAGE 46.]

SEVENTH ANNUAL MEETING, IOWA DISTRICT GAS ASSOCIATION.

HELD IN LAFAYETTE INN, CLINTON, IA., MAY 24 AND 25.

THIRD DAY—MORNING SESSION.

Discussion on the Blinks' Paper.

Mr. Warnick—On the question of electric competition, I would like to ask Mr. Blinks how he treats the heat proposition?

Mr. Blinks—You can't meet the heat proposition in all cases; but that is very largely due to prejudice rather than the real discomfort that might be caused by the lamp. It was my good fortune last week to be in Chicago at the time the Illuminating Engineering Society held its meeting in the office of the Peoples Gas Company, where the magnificent lighting was discussed by one of the Company's experts. The larger part of the membership in that Association, I imagine, comes from the electric ranks. I had gone into the Palmer House looking for someone, where there wasn't a bit of gas being burned, and it was most oppressively hot. I stepped into the gas building; it was not hot there. It was hot in the street. The first thing I heard was one of the young men there saying (he evidently did not have proper respect for the hosts of the evening): "It is pretty hot here; I guess we will come around and take their order in the morning and wire them up." It wasn't one bit hotter there than it was in the other place, gas being burned exclusively in the Peoples office and electricity exclusively in the hotel. When I first got into the lamp business I found that in the summer time the large orders were coming from the South, and the only explanation I had for that was that the freight service was poor, and that the Southern people, being very forehanded, were getting in their lamps for fall stock. A year or two afterwards I had an opportunity to ask one of the Southern men about that. In a rather expressive way he said: "Fall business, nothing! We are using those right along down our way. When it is hot we know it is hot. It is hot where they burn electricity and hot where they burn gas." It is really a fact that there is less complaint all through the South of heat from gas lamps of any kind, as far as it has been told me, than there is in the North. We are so accustomed up here to have the weather tempered to us, that when it gets hot we want to blame it on to something, and naturally the first thing we see gets it. I don't think you can overcome that. When the gas man goes up against a proposition of that sort he will probably have to let it go. I don't think it is nearly as serious as it is made out to be. Of course, it is not much of a problem for the combination companies, and if the great competing gas companies lose that revenue for a short time it is not a very serious matter anyway. In cities where they pass the maintenance on the arc lamps in the summer time, when the 3 months is up a very large percentage of that business comes right back. If an arc light campaign is started in the fall, if they are very much bothered by the heat proposition by the time summer comes around, let them switch.

The next paper on the list was that on

NEW BUSINESS DEVELOPMENT,

by Mr. B. C. Adams, of Lincoln, Neb. In his absence, the paper was read by Mr. Kennedy, as follows:

Since my education in college was conducted through an engineering course, and later in the operating departments of the gas and electric industry, my propriety in talking on the subject assigned me may be questioned; but I hope no one will question my belief in the subject of new business development.

Mr. Henry L. Doherty organized the first new business or commercial department in the gas and electric industry, at Denver, in 1900. The department had, in its inception, one specific purpose; namely, the effort to create and obtain business that did not come to the com-

pany's office voluntarily. Some ridiculed Mr. Doherty for his mythical notions, and his endeavor to overturn the dignity of the profession by making a house-to-house canvass the same as our old-fashioned tin peddler. His theory was correct, and of course practice has proven it to all of us.

In the beginning the department in most companies was looked upon as a blacksheep; it was blamed by the operating department, by the bookkeeping department, by the order and complaint department, and by the managerial department for all their individual and collective faults. The department itself was almost afraid to hold its head up. It was weak-kneed; it was not sure it could make good. It did make good at once, and its marvelous success has perhaps been of even greater benefit to the individual consumer than to the companies themselves. To-day almost everyone enjoys the convenience of gas equipment where before it was enjoyed by comparatively few. As to just how a new business department should be organized and conducted is still a matter argued by some gas managers. They disagree as to the number of men required; the salaries that should be paid, and the latitude they should be allowed.

The managers in general agree that the number of men in the department should be governed by the number of houses or prospects. They agree that present consumers are prospects as well as those who are not consumers; but they do not agree as to the number of prospects one man can handle. Of course, there is a difference in efficiency of men so we must consider the average man. To get at the number of prospects to assign him we must determine the number of times per year each prospect must be called upon and know how many effective calls a man can make in a day—I mean by effective calls those that produce either immediate or ultimate good results. And this means, too, that time enough must be taken at each call to promote business. There are but two occasions where the minium amount of time must be spent; First, where the door is slammed and locked; and the other, where the order is given without solicitation and the solicitor merely acts as an order taker. In each case, however, always make a second call.

I contend that the number of effective calls which can be made per day is dependent upon the degree of saturation existing in given territory. I would measure saturation in terms of the number of inhabitants per consumer and the annual consumption per consumer. I think that, with a minimum degree of saturation, we should have a minimum assignment of prospects and a maximum number of calls allowed per prospect per year; while on the other hand, with a maximum of saturation we should have a maximum assignment of prospects and minimum number of calls per prospect per year. Let me assume for illustration that in a territory of 600 houses no gas has ever been used. My experience would teach that one good man could not do better in 6 months than obtain 20 per cent. Four men could not do more than one during this same initial interval. The second year the first year's results could be improved with one man, but the third year it would not pay to allow one man to devote all his time to such a limited territory. I would say that, in virgin territory, one solicitor should not be given over 500 to 600 house prospects, and that where there is one consumer for every 4 houses we require one solicitor for every 850 houses. Where there is one consumer for every 2 houses we require one solicitor for every 1,000 houses; and where we have one consumer for every house and one-fifth we require one solicitor for every 1,500 houses. It is my belief that the last figure for assignment should not be exceeded in any case.

Pay.—In the first department organized at Denver the men were paid on a commission basis. So much was allowed for an order for a gas stove, water heater, etc. This method was abandoned for a flat salary and commission, the latter depending upon increase in gross revenue and each man's proportion proportional to the class of business secured. At Lincoln we worked out a modification of the latter scheme. We pay a flat salary of $50 per month, and set aside a bonus which is divided each month among the men in the department according to the total business secured by each man. Each class of business is given a predetermined value; for instance, a gas range sale counts ... points; a water heater .... points, etc. If all the men had a total of 10,000 points at the end of the month, and one of the men had a 1,000 point credit, he would get 10 per cent. of the bonus.

Our method causes keen competition among the men, for the man with the largest number of points gets the largest per cent. of the bonus. The system prevents the men from sharing in natural increases of revenue or revenue which they are in no way responsible for obtaining. It leads to force them to promote business rather than become mere order takers. The company under it secures a maximum amount of new business at a minimum of cost.

Our cost of advertising, salaries, bonuses and salesroom expense for 12 months foots us but 45 per cent. of our gross increase in revenue.

Latitude.—It is not possible to harness a commercial department with an unlimited amount of red tape and obtain good results. The department must have energetic and enthusiastic men. Such men cannot work at their best efficiency when under a rigid government of restriction and regulation. If your experience makes you think otherwise, it is because you have paid poor men too much or good men not enough. A well kept canvass book, filled by the man covering a territory, together with a system for putting through and executing orders with the least possible number of order blanks and requisitions, is wanted. The department manager must know how to conduct the department so that he is in touch with every detail of it. Clerical work in this connection must be done by an office force. The department should have enough latitude so that the men in it can adjust complaints on their territory and see that many little things are done for consumers that tend to produce good and kindly feeling toward the company. Each man on his territory should appear to the prospects in it as the manager of that district. He should be to them a man of authority and standing with the company and a man that can do things for them.

The Specialist.—The latest development in the commercial field has been the illuminating expert and the industrial fuel man. In the larger companies these men are essential and are, of course, free lances as far as territory is concerned. I believe the industrial fuel field in many companies is still in its infancy. To develop it special effort and special knowledge must prevail. The larger companies can well afford one or two such men the year round, while the smaller companies can obtain expert services for shorter intervals.

Supplies and Piping.—Notwithstanding the attendant trouble, I have come to the conclusion that the gas office must be the supply house for every modern gas appliance, and that it must do all necessary work in making appliance connections and piping houses. Fair prices can be placed on all fixtures and appliances, and fair charges made for labor and material furnished. There is no one else who can or will push our business as we can. To sell the greatest amount of gas to the most people at the lowest price consistent with reasonable returns, we must develop our own business from the manufacture of our product and its sale to the installation of pipe and fixtures and appliances through which it passes for ultimate consumption.

In conclusion let me call your attention to the fact that since "New Business" has been developed there has been less speculation in buying and selling gas properties. There has been more development of the business which has had the effect of changing speculations to permanent investments. There is, I believe, a much better feeling between the public in general and gas companies in general to-day than six years ago. New business departments are not alone responsible; but are they not entitled to a goodly per cent. of credit?

Upon motion, a vote of thanks was accorded Mr. Adams.

The paper, by Mr. James B. Douglas, of Philadelphia, entitled

ACCIDENTS: THEIR PREVENTION AND CARE,

was then read by the Secretary:

In accident work the order of the day is prevention, and efforts designed to conserve human life are being brought prominently before us daily. Those in charge of many industrial establishments, who have long recognized the necessity for fire underwriters' inspections, are now fast beginning to see the advisability of having periodical inspections of their properties made by men informed on the cause of accidents and their prevention. The risk of personal injury or death accompanying a bad accident hazard is frequently greater than that due to a fire hazard, and this is a fact many employers have been slow to recognize. The majority of accidents almost invariably result in personal injuries of greater or lesser extent, according to the nature of the hazard, while a comparatively small percentage of fires cause personal injuries.

At several of the larger industrial establishments in the east, experts are now employed whose sole duties are to see that the hundreds of employes work under safe conditions; and, among other corporations, notably the Philadelphia Rapid Transit Company, the work of accident prevention is also carried on with very gratifying results. It is, therefore, apparent that gas companies should

be able to obtain equally satisfactory results, not only through a reduction in the number of injured employes but in the resultant expenditures as well, if they will but see to it that one man is constantly on the lookout to eliminate accident hazards. This work, however, cannot be done to as good advantage by one who is permanently employed about a plant as by one who is less familiar with the surroundings, and who consequently would find danger points more quickly. I am informed that the employe accident cases of a gas company in one of our larger cities during the year 1910 fell under the following classification:

		Percentage.
Negligence:		
Of injured	.084	....
Of fellow servant	.056	
		.14
Defects		.033
Lack of guards		.007
Purely accidental		.724
Miscellaneous		.096

From this it will be noticed that almost three quarters of the total cases received during 1910 were of a purely accidental nature, while but about 3 per cent. of the said total were due to mechanical defects.

The cases under the heading of purely accidental (slipping or falling, due to no apparent cause; glancing of tools; injuries due to stumbling, etc., etc.), as well as the cases of the other classes enumerated, can be materially reduced in number and severity by systematically keeping the subject of accidents and their prevention daily before all workmen. Some employers favor the idea of placing in pay envelopes cards warning the receiver to be careful to avoid injury, and to keep the likelihood of accidents always in mind. Where the workmen follow such warnings, the cause of accident prevention is continuously advanced through daily observations unconsciously made. These observations are in fact accident hazard inspections.

Workmen alone, however, should not be depended upon to do all of this work. It should be under the direction of a specialist; one who is thoroughly conversant with the various preventive measures now being rapidly adopted throughout the country; one whose principal interest lies in accident prevention.

Within the last 3 years various exhibitions of safety devices have been held in several cities. It is strange, however, that these exhibitions in a number of instances have been poorly attended? In this connection I want to direct attention to the fact that it is without question the duty of every employer of labor to learn as much as he can about safety devices and to promptly adopt them after their practical value has been proven. The expense incident to the sending of a representative to these exhibitions is easily justified. He will certainly find at least one device that his company can adopt to the advantage of all concerned, and if that device of itself prevents a single serious accident, the expenditure is proven well worth while.

In studying accident prevention you would all profit by investigating the work and plans of the "American Museum of Safety," New York city. Improved results in preventing accidents can also be secured through the use of a printed list of questions bearing on accident hazards. These questions should be so arranged as to cover every phase of the company's work, and they should be answered periodically after each hazard inspection. To illustrate, I mention a number of questions, as follows:

"When were employees last instructed to guard against their clothing being caught in machinery or belting?"

"Are guard rails installed around rapidly moving machinery?"

"When were employees last instructed not to approach shafting between pulleys or near flywheels while same are in motion, except to examine bearings, and then to be careful to see that there is ample clearance between their bodies and the edges of running pulleys or belting?"

"Are the links and bolt fastenings on flywheel joints inspected for defects? Date of last inspection?"

"Are tools and oily waste kept off floors, especially around machinery in motion?"

"When were employees last warned against leaving tools, etc., on ladders or other places from where they would be likely to fall and cause injury?"

"Are employees instructed to avoid the open ends of pipe connections?"

"Are warning cards, 'Men at work in boiler; do not open valve,' in use when employees are at work in boilers?"

"Are employees warned against hanging additional weights on safety valves, dampers or regulators?"

"Are elevators periodically inspected? Date of last inspection?"

"Are men cautioned against working under elevators in operation?"

"Are dangerous and dark stairways an d places about the works provided with lights?"

"Have the slates on the roof and signs (advertising) been examined recently to see that they are secure?"

"Are the cornices, gutters and rain spouts in good condition, so that nothing can drop or be blown off and cause injury?"

"Is all loose or damaged glass promptly removed from windows?"

"Are lacings and metal fasteners on belts periodically inspected?"

"Are all persons except employes refused admittance to the works or yards, except on pass or order?"

"Are covers of pits, tanks, hatchways and openings in floors safe and kept in place?"

"Are danger signals placed around openings in streets?"

"Are precautions used in shoring excavations made in soil which is liable to cave in?"

"Are all blocks and falls and chain hoists periodically inspected?"

"Are company's motorcyles, bicycles, etc., regularly inspected?"

The following is a reduced illustration of a form which can be advantageously used by the safety inspector in drawing dangerous conditions to the manager's attention.

ACCIDENT HAZARD INSPECTION.

Made by..... . date..... 19 .

Location?	Hazard?	Why?	Recommendation?	Remarks.

(Size 11 inches by 8 inches; made in pads of 25 each.)

We have all heard from time to time of accidents due to meter readers leaving trapdoors open through which they pass to the meters. It has been suggested that the danger of accidents due to this cause can be lessened by having the presence of trapdoors noted in the route books. Where vicious dogs are kept on consumers' premises, the fact that their presence is so noted by meter readers causes the latter to be on their guard to avoid attack. The same course can be wisely followed with the trapdoor hazard.

In the case of accidents, after doing all within your power to see that the injured is made as comfortable as possible under the circumstances, and that he is receiving proper medical or surgical attention. it is important that the conditions leading up to the accident should be investigated immediately. This, not only with the view of promptly adopting such precautions as will make a repetition of the accident unlikely, but also with the object of gathering all possible evidence to determine whether or not liability, which would entitle the injured to more than the usual allowance of partial wages, exists.

The witnesses should be interviewed immediately where the injuries are serious, and their testimony concerning what they saw and heard at the time and place of accident, and their opinion of its cause, reduced to written statements. These statements should be signed and witnessed. In serious cases, as a precaution against the possibility of witnesses changing their testimony, their statements should be sworn to before a notary public or a justice of the peace.

When an interview will not interfere with the progress of the injured toward recovery, he should be seen by the investigator, who should obtain his verbal or written statement. Then, after the company has received the physician's report and the several statements covering the evidence, if the case warrants more than the ordinary allowance of partial wages, a settlement limit should be promptly authorized and an endeavor made to close the case.

No payment should be made a claimant except in return for a release, as cases are on record in which an employer, after making liberal allowances to an injured employe from time-to-time without securing a release, suddenly found that the employe had experienced a change of faith, due to the importunities of unscrupulous lawyers that they be given the cases to prosecute. I know of an instance wherein his course was followed by the injured to his great loss. The attorney, like many others, seemed to think he could

frighten the company into making a settlement to avoid suit, with the result that the employe not only received nothing further from his employer, but derived no benefit from advances he had made to the attorney from his earnings. As a rule, however, I am glad to say that gas companies nowadays have little trouble in taking care of their accident cases, and that their employees are well satisfied with the treatment accorded them.

It is unwise to have injured employees themselves fill out accident reports, as they do not understand the reason for some of the questions asked, and this lack of knowledge upon their part oftentimes arouses suspicion in their minds. The questions should be answered by the immediate superior of the injured employee.

The chances of settling a liability case direct with a claimant are at times lost because of the company's representative making an offer at a time when the claimant is only aggravated by the suggestion. The representative should be careful and quick to learn the claimant's frame of mind and to govern himself accordingly. Where the figures demanded are prohibitive, it is usually not advisable to make the claimant an offer, but to wait until his figures become reasonable. It should also be remembered that much is to be accomplished by suggestion rather than by direct offers. Offers at certain stages only increase demands.

The many bills providing for workmen's compensation, of which we read nowadays in the newspapers, are of little real advantage to the average injured employee of a gas company, for as a rule they provide payments of about 50 per cent. of the wages lost through accident while on duty. I think I can safely say that most of the gas companies pay during disability due to accident, up to 75 per cent. of the wages lost, provided the injured is not grossly careless. In addition, many gas companies pay medical expenses and, in certain cases, full wages, plus medical expenses during disability.

A comparison I made several months ago, of payments by gas companies to their employees disabled by accident while on duty, under the system in vogue before a workman's compensation bill was introduced, showed that the injured workmen were better off when their employers did not follow strictly the provisions of the bill and made them the usual payments when injured. In other words, they were receiving more under their employers' system of payments during disability than would be due them under workmen's compensation laws. This surely speaks well for the gas companies' interest in their employees.

In closing, I trust that this paper leaves with you a determination to promptly do all within your power to advance the work of accident prevention. Let us all hope that this good cause will make such favorable progress that there will be fewer accidents to care for as each month passes.

Discussion.

Mr. Warnick—Mr. Perry has a written discussion here that he wanted me to read: At Omaha, during the past year, we have given particular attention to accidents, their prevention and care, with the idea of reducing the number of accidents, the cost of accidents and damages, and also with the idea of improving the personnel of the distribution and manufacturing forces. Classifying the accidents at Omaha, since January 1, 1910, until the present time, in a similar manner to that employed by Mr. Douglas in the case of one particular company, we find as follows:

		Percentage.
Negligence:		
Of injured	45	0.31
Of fellow servant	11	0.08
	56	0.39
Defects	10	0.07
Lack of guards	10	0.07
Purely accidental	56	0.39
Miscellaneous	12	0.08
Total	144	1.00

In our case you will note that the accidents due to negligence of the injured, and of fellow servant, amounted to 39 per cent., almost three times as much as Mr. Douglas gives for a certain gas company. During the past 9 months we have been giving particular attention to employees, with a view of dropping from the payrolls, all men who are habitually careless, or whose work on examination indicates that there is a likelihood of accidents. At the same time we are endeavoring to keep safeguards and defects down to a minimum. Since January 1, 1910, to date, the classification of accidents runs as follows:

		Percentage.
Negligence:		
Of injured	10	0.26
Of fellow servant	3	0.08
	13	0.34
Defects	2	0.05
Lack of guards	2	0.05
Purely accidental	15	0.39
Miscellaneous	6	0.18
Total	38	0.99

Referring now to the list of questions for the prevention of accidents, we have instituted a list of questions for each class of work, such as main and service work in the streets, shop work, and work in the manufacturing department. These questions are gone over by the superintendent and his assistants at frequent intervals, and inspections are made to see that all care possible is taken to prevent accidents. Besides this list of questions we have monthly inspections made of all departments by a special inspector who is not responsible to any department head or foreman, but who is responsible directly to the superintendent. His reports are made on the blank form given by Mr. Douglas, in his paper, and wherever possible the requirements are always carried out immediately, unless they involve a large expenditure of money, in which case further investigation is made, and such action taken as is deemed wise. We have had, since the first of January, one trap-door accident involving considerable expense, due to a meter reader having left a trap door open after having read the meter. We are having meter readers turn in a list of trap-doors, and to date amount to about 2,400 or about 8 per cent. of the total number in use. The fact that the trap-door exists at any place is now shown by the addressograph, the notice being given on the meter reader's slip. Whether or not this will decrease the likelihood of accidents we do not know, but it should serve to call the meter reader's attention to the fact that the door should be closed at the time he is making his statement on the meter reader's slip. I recently read an article giving the progress the Northwestern Railroad is making in reference to the reduction of accidents. This article stated that, in the month of April, 1911, there were 332 accidents as compared with 648 in April, 1910, and that from July 1, 1910, to April 1, 1911, the number of employees injured was 5,801, as against 6,706 in the former year. This decrease of 905 people injured came in 10 months of organization, the record for April indicating that the organization for the prevention of accidents has been effective, and probably also what can be done in the way of reducing accidents by those of the gas companies now giving this question very little attention. I also note that the Northwestern Railroad Company use such notices in their pay envelopes as, "Safety first! You are responsible for the safety of others as well as yourself;" or, "Remember that it takes less time to do a thing right than it does to explain why you did it wrong." I am preparing to use cards of this sort in the envelopes, as I believe it will be a strong reminder to all employees, not only to be careful about their work but to do their best to prevent accidents. It is my intention to have these cards bear my name as superintendent of the gas company, to make the reminder to the men stronger and more personal than it would otherwise be. The employment of experienced superintendents and foremen who exercise a high degree of care and perseverance in all they do is without doubt of first importance in making progress towards the prevention of accidents. With such a man in charge, there is an unconscious imitation, tending to make the employees also more careful. The manager or superintendent responsible must always be on the lookout to exercise all the care and precautions possible for the prevention of accidents. He should see that machinery and appliances of the proper design and construction are on hand and ready for use, and that all safety appliances are installed wherever they may be necessary.

The President—The next paper on the programme is by Mr. H. B. Maynard, of Waterloo, on

THE ADVANTAGES OF EMPLOYEES' CLUBS.

The author prefaced the paper thus: I want to say, preliminary to reading what I have written, that over one of the earlier papers read and the discussion thereon I had the opinion that probably my idea as to the importance of employees of the company was wrong, and that, in order to promote harmony in this meeting, I might well leave out a remark or two that I had made. But, having looked over the membership to find a few of us here are not managers of com

(*Continued on page* 58.)

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New Advertisements and changes of copy therefor should be in hand Wednesday noon of week prior to date of issue.

NEW YORK, MONDAY, JULY 24, 1911.

[Official Notice.]

Wrinkle Department, American Gas Institute.

Wrinkle Department, American Gas Institute,
Office of Editor,
Denver, Col., July 5, 1911.

To the Members, American Gas Institute: The Editor of the Wrinkle Department, believing that the members of the Institute, in selecting him to direct this important division of its affairs, were also alive to the necessity of aiding him in the routine work connected therewith, takes occasion to ask now for this assistance. The meeting time is not so far from to-day that inaction will be unimportant. He, therefore, invites, in fact, solicits, suggestions from the members as to how this work may be best carried on, and hopes—believes—that valuable as the contributions to the department have been, the scope thereof may be still further enlarged. He will gladly receive matter related to any wrinkle that has been smoothed out in the narrator's experience; and those interested need not think it at all fundamental that the recital of their experiences should be co-related to higher mathematics, to abstruse calculations, or to the revealing of something absolutely new. Any matter describing a new, or seemingly new, way of getting over an old difficulty, is acceptable; yes, is welcome. Send in your description in your own language, and if there is any need of "touching it up," that is why the Editor is on the job. Whenever illustrations are to accompany the text, see to it that the drawings, sketches or photographs are in black and white. Get your story in shape and forward the same as soon as possible to

Gas and Electric Building, Denver, Col. A. F. Traver, Editor.

[Official Notice.]

Experience Department, Pacific Coast Gas Association.

Pacific Coast Gas Association,
Office of Experience Editor,
San Jose, Cal., June 24, 1911.

To the Members: The Nineteenth Annual Convention of the Pacific Coast Gas Association will be held in Oakland, September 19, 20 and 21. The Experience Editor of the Association is in despair. Cast him a line; come to his rescue, for he needs help. To the notices sent out by the Secretary, few have replied.

We know that every gas man has had at least one experience during the last year that would be of interest to us all. Will you kindly respond at once? We know you are busy; gas men always are. And busy men have many experiences worth telling.

Sincerely yours, John D. Kuster,
48 E. San Antonio street. Experience Editor.

BRIEFLY TOLD.

Mr. Miller's Bereavement.—The sympathy of the profession will flow in unstinted measure to Mr. and Mrs. Thomas D. Miller, whose oldest son, Thos. Miller, Jr., died in Colorado Springs, Col., the night of the 19th inst. He had been sojourning there for quite a while, in the hope that the climatic conditions would enable him to conquer the attacks of the persistent malady from which he had long been a sufferer. Nature would not have it, though; more's the pity. Deceased, who was in his 24th year, through his own choice and the hope of his father, had determined to fit himself for the career of a gas engineer, and this selecting seemed a perfectly natural one, in that the example of his father, who for over 40 years has been prominently and favorably regarded in the gas industry by his associates, was constantly before him. It is satisfactory to know that his going beyond was sorrowfully witnessed by his parents and the other members of the family; for even in death is there satisfaction that there was love to the last. Interment was made in Colorado Springs, the afternoon of the 21st inst.

Mr. Howard E. Mann Goes Arroad.—Mr. Howard E. Mann, Engineer Gas Department, Montreal (Can.) Light, Heat and Power Company, left Montreal on the 15th inst. for Europe, the main object of his journeying being to investigate the methods of gas manufacturing in vogue on the other side. The proprietors of the Montreal Light, Heat and Power Company propose building a new gas works to take care of the increase in the gas consumption, and it is said that a departure may be made on his return from the present method of carbonizing coal in horizontal through retorts. The advantages, and otherwise, of vertical retorts intermittently and continuous, and of chamber ovens, will be critically and carefully studied, and the result of Mr. Mann's trip will probably determine the type of plant to be put down at the new works. He will probably return by September first.

The Lighting of Large Interiors.—The lighting of the new station of the Chicago and Northwestern Railway, a description of which is concluded in this issue of the Journal, carries a number of features which have an important bearing upon modern practice in the lighting of large interiors. In practically all of the large rooms in the building the lighting system is one of large units and of diffusing glassware which plan provides generous illumination for and upon floors, walls and ceilings. Nevertheless there are numbers of types of gas lamps which are admirably suited to supply the same kind of lighting, and this fact should not be overlooked, when important public buildings are projected. Installations such as these are perhaps of greater advertising value to a gas company than street lighting is, and aside from the revenue to be gained, other great advantages would be secured through such business. We have the lamps and we have the men to install and maintain them; and if there is anything lacking, such is in the enthusiasm of the officials, the directors and the managers, rather than any paucity thereof among the men on the street.—Lumino.

CURRENT MENTION.

Mr. J. P. Maxwell has resigned from the service of the Improved Equipment Company to take over the important post of Sales' Manager to and for the C. W. Hunt Company. Now that he is back with his former people, it may be pertinent to remark that they made a mistake when they accepted his resignation about 3 years ago.

The activities of Secretary Milton and of Superintendents Spielman and Heard, of the Hagerstown (Md.) Light and Heat Company, during recent months, seem to have borne acceptable results, for, at a recent meeting of its Directors, it was determined to declare the dividends in quarterly term, instead of half yearly as heretofore. To mark the Company's return to active prosperity it was resolved to declare a dividend at the rate of 1 per cent. for the first (or March)

quarter, the rate for the second (or July) quarter to be 1¼ per cent., thus restoring the shares to a 5 per cent. per annum standing. The balance (and a considerable one it was) was put back into the property with a view to increasing the efficiency of the Company's service. General Manager Milton's mid-summer official statement shows that, for the 6 months (to June 30), gas sales had increased 19 per cent., 197 new services had been laid, 316 gas ranges had been hooked up, and 1 mile of distributing mains had been put down. There was also a marked decrease in expense chargeable to operating. A recommendation that the minimum service charge of 50 cents per month be reduced to 25 cents was agreed to. Manager Milton further acknowledged his gratefulness over the fair manner in which the Company had been treated by the public. Complaints had been very few, which happy result was in large measure due to the harmony that existed between the public and the employees.

THE Morris Iron Company reports an increasing business in its division of the ornamental lighting field, for which it manufactures many designs; the greater demand is for 5-light standard to carry 1 upright globe and 4 inverted globes. Recent orders include 5 light standards, for erection in Marshall, Mich., and Richmond, Va. The Company's combination and lighting poles are also finding much favor.

PUBLICATIONS.

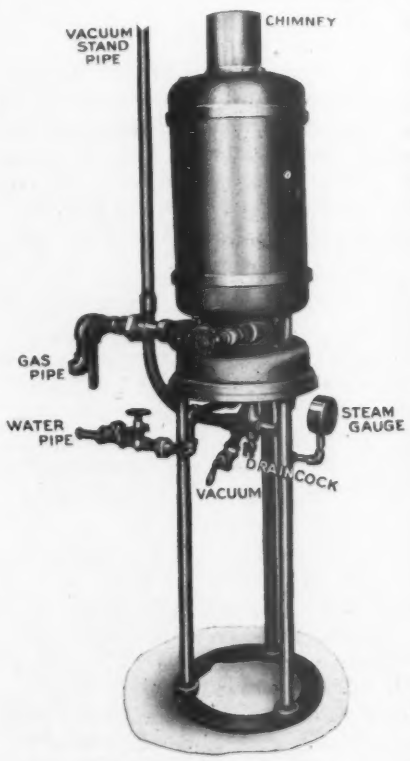
Journal of the Worcester Polytechnic Institute.—The July number contains an article, by W.T. Sedgwick, on "Scientists and Technicians in the Public Service," together with the usual announcements and proceedings covering the activities of the Institute.

Bristol's Recording Instruments.—Condensed catalogue, No. 160, which describes in a general way the extensive line of recording instruments manufactured by the Company.

Lamp Posts.—The "Sun" Street Light Company has issued a handsome catalogue which lists illustratively the posts or "gasolabra" manufactured by it. The posts are made in capacities of from 1 to 5-light, all of which are fully illustrated and described.

Patent Office Report, 1910.—The annual report of the Commissioner of Patents, for year ended December 31, 1910, shows that the receipts of the office total over two million dollars. The applications numbered nearly 65,000; those issued, 36,000. Those referring to the gas industry have been noted regularly in the JOURNAL.

"The Purifier" Sanitary Vacuum Cleaner.



The Gas Vacuum Generator.

There has recently been placed on the market, by the Sanitary Vacuum Cleaning and Power Co., of Brooklyn, N. Y, a new vacuum cleaner operated by gas, which seems to fill a long needed want, and to logically follow the development of the modern gas range. It is a stationary cleaner, installed in the cellar, and can be placed in any house piped for water and gas.

This machine consists of a number of hollow, cast iron sections, fastened together by an ingenious system of small riser tubes. Passing up between these sections are two pipes, one a water, pipe, connecting at the top with the uppermost section, the other a vacuum pipe, the open end of which is about an inch above the upper cross section. Connected with the lowest cross-section is a small ejector, which, in turn, connects with the vacuum pipe. At its lower end the vacuum pipe passes from the machine and connects with a standpipe, running from the upper floors of the house to the machine in the cellar. The water pipe passes out from the bottom of the machine to a connection with the house water pipes, the supply of water being regulated by a needle valve.

Under the castings, and forming the base of the machine, is a cast iron, circular fire box, into which the gas is admitted. In front of this, and separated from it by a short distance, is the pipe running from the house gas connections, with the necessary valves. The gas jumps across this opening, drawing air in with it, and ignites within the circular chamber, the flame passing up between and around the cross section, the vacuum and water pipes, and then out over the top section into the chimney. Surrounding the sections is a cover of asbestos, and another of sheet iron. The whole machine is compact, 11 inches by 22 inches in size; simple, efficient and absolutely safe, it weighs about 125 pounds.

Gas-Steam Power Generator.

In its operation the gas is first lighted and the machine allowed to get thoroughly hot. Then the needle valve on the water pipe is opened and the water admitted. It passes to the top of the machine, enters the upper section and begins to flow downward, circulating through the sections and forming into steam before it has passed through more than the second or third section. This steam, in turn, becomes dry and highly superheated, and thence passes through the ejector into the vacuum pipe, being discharged upwards into the chimney, an al ways open safety valve preventing the possibility of any explosion.

The discharge of the steam in this manner draws all the air out of the vacuum standpipe, creating a vacuum as high as 15 or 17 inches, depending on the steam and water pressure; but this vacuum can be lowered to 8 or 10 inches and a greater volume of displacement provided, if desired. The discharge of steam being steady, the exhaust of air from the vacuum pipe is also steady and a strong, continuous suction is created, which gives a greater cleaning power to the machine than can be had by any other means

The machine is simple in operation, takes up no room to speak of, can be used wherever gas and water connections can be had, has no moving parts to create trouble, and, once started, runs itself, requiring no watching or care. The dirt taken up by the cleaning tools passes through the heated part of the tube in the machine, through the superheated steam and at the top through the burning gas. Everything which will burn is consumed and the non-consumable material (such as grains of sand, etc.) is discharged through the chimney. In its operation this machine consumes about 100 cubic feet of gas per hour.

It is not intended, however, merely for a vacuum cleaner. The machine has other possibilities and its field of operation is much larger than that of vacuum cleaning alone. It can be used as a power machine also, operating a small motor, and at the same time creating and maintaining a vacuum of from 5 to 8 inches. The Company, at its demonstrating rooms in Brooklyn, has a ¼-horse power engine, run by one of its machines, which is also creating 7 inches of vacuum at the same time. It can be applied also to heating purposes. As a boiler proposition alone, it is the simplest, safest and quickest method of producing steam on the market. Owing to the fact that the water and steam pressures automatically regulate each other, thus insuring absolute safety, and the further fact that it is as simple to operate as the ordinary gas range, its use requires neither license nor the employment of skilled mechanics.

Anyone can operate it and it can be placed in any house where a gas range is allowed. The field of operation for such a machine is enormous.

(*Continued from page 55.*)

panies, I thought I would let it go as it is, and that if I stirred up something possibly it would not do me any harm.

The spirit of association has in all ages induced men to join together for the pleasures of mutual enjoyment, or for the attainment of some common purpose or benefit, and this spirit particularly asserts itself with those pursuing like occupation or possessing similar interests. This natural affinity was active as far back as history was making, probably attaining its highest accomplishment during the Middle Ages, in the development of craft-guilds in the Teutonic countries, especially in England. They chose their own officers, made rules for self-government, paid contributions to a common fund, met and feasted at stated periods. Differing from the laboring organizations of to-day, a perfect acquaintance with the details of their trade and ability to perform work were in all cases preliminary requisites to membership. Shorter hours of labor, with lower wages, was not then the controlling idea, but the main provision of the craft, and the very soul of its constitution, were the regulations intended to insure excellency of the products and the capacity of the workmen.

Were labor organization of the present day given to work along these lines there would be little reason for the present growing movement towards the formation of clubs among the employees of large enterprises, notably among the employees of public utility companies. That advantages do accrue from such organizations is not the province of this paper to prove, for their continued formation with virile results, is the best evidence of their success, hence it only remains for me to enumerate some of the many directions in which their conduct works for good.

Confining ourselves to a consideration of such clubs as are formed among the employees of public utility companies, it is easily demonstrable that beneficent results come both directly and indirectly, not only to the employees themselves but to the companies they serve, and to the public they both serve.

To the employee comes opportunity for more intimate association with his fellow employees, engaged in his own especial kind of work, as well as in the other branches of allied labor necessary to the conduct of the business. This Association cannot fail to broaden his knowledge and more fully equip him for his particular work and fit him for advancement with his employers.

The discussion of papers of technical, mechanical or commercial nature, affords him probably what is his only opportunity to become acquainted with subjects outside of his customary sphere of labor.

Access to periodicals subscribed for by the club supplies opportunity for study and investigation, otherwise denied him by reason of expense. If it be true that "A little learning is a dangerous thing," I know of no other field where added knowledge can be of greater value than in the discharge of daily duties by the average gas man. Whatever of advantage comes to individual employees of a gas company through the organization of an employees' club, the same advantage, but in a cumulative form, comes to the company itself. No better preparation for satisfactory service to consumers can be possible than an organization of helpers, every man equipped for his own particular work, but with a measure of acquaintance with the other necessary branches. No one man is ever big enough to be a "Pooh Bah" in a public utility company, and the success of such a company depends more upon the loyalty and ability of subordinates than upon the managing head. There is absolutely necessary an *esprit du corps* that gave expression to the motto of the Three Guardsmen, "One for all, and all for one." Such a spirit is possible, and only possible, when its source is from the company itself as represented by the heads of various departments. Through the agency of a club, meeting regularly and considering every phase of relation to the public it serves, bringing into closer and more intimate association the workmen from factory, office and street, this spirit can be most profitably fostered. Many companies so strongly realize this that they provide and equip special meeting places and assume the entire expense necessary therefor. However commendable the thought which suggests this, I cannot unqualifiedly indorse it, for I believe the men take more interest where they are at least permitted to have a small proprietary interest. The company profits by these clubs in being able at all times to find men prepared for vacancies that occur, in having better protection to its property and interests by reason of having more employees acquainted with more than one branch of its work. That company receives best service the workmen of which, having reasonable hope of advancement, entertain ambitions beyond a study of the clock and an expectation of the next pay check. Regular attendance at the employees' club by officers of the company enables them to discover who these workmen are.

Nothing of good can happen to a utility company which does not necessarily benefit the customers of that company. To be served by a higher grade of company servants gives the public added confidence in that company, and raises the standard of opinion towards utility companies in general.

When a customer can make an inquiry or a complaint to an employee and receive the desired information or relief without being shunted from desk-to-window and from window-to-desk, it is "Consumation devoutly to be wished." I do not mean by this that there will not always remain certain of the technical or clerical force, who are necessarily the court of last resort; but there are many and frequent cases which can be safely, promptly and finally disposed of by any employee of ordinary intelligence supplemented by the knowledge derived from papers and discussions at the club meetings.

One of our Presidents once said, "He serves his party best, who serves his country best," which, being translated into our language, means, "He serves his company best, who serves its customers best."

I confess that most of the foregoing observations are theoretical, so far as personal experience goes, as we do not at present have in our organization such a club as secures the fullest possible results. I have, however, been able to acquaint myself with the operation and accomplishments of such organizations elsewhere as many of you have. A record of continued service with the gas companies at Rochester, N. Y., or Denver, Colo., is taken the country over as sufficient credentials and recommendations to secure a position, and principally because it evidences the all-around training made possible by well ordered, competently managed employees clubs.

The fraternity of interest and the loyality of labor noticeable throughout the working forces at Jacksonville, Mobile and Montgomery, are directly traceable to the personal contact and friendly intercourse between the employees, from manager to plant laborer. There is no possible doubt but that the success and popularity of the Lynn (Mass.) Company are in a great measure the result of the interest shown by Manager Prichard in the social, intellectual and even physical development of the employees.

The many sections of the National Commercial Gas Association are accomplishing great good along lines similar, though more restricted, than usually followed by employees clubs. Time was when the success or failure of a gas company was assumed to be determined at the plant; more recently the commercial department thought that prosperity came through its efforts; later it was claimed that the public relations of a company with its consumers were a determining factor in making profits secure. What more natural than the discovery that each of these contentions was correct, to a degree, and what conclusion more proper than that harmonious activity along all these lines is the absolute essential?

If we accept the dictum of Sir Francis Bacon that "Reading maketh a full man, conference a ready man and writing an exact man" we should be prepared to realize that a conscientious member of an employees' club, by reading technical journals, participating in the discussion of current topics, and the preparation of pertinent papers, has within his power the making of an all-round man.

An Interjected Resolution.

Mr. Addy—I do not wish to interrupt the discussion, but I would like to be allowed to make a motion at this time, if I may. I think we have all noticed the absence of Mr. Jansen Haines during the sessions. He is an ex-President, has represented this Association with great ability in the American Gas Institute, and has taken part in our discussions at the various meetings in a way both interesting and instructive. I would move, therefore, that the Secretary be instructed to carry to carry our greetings to Mr. Haines, and our regrets that he was unable to be with us at this meeting. [Adopted.]

Discussion.

Mr. Weisgerber—I believe the majority of the gas men present do not realize the conditions that formerly existed in Cedar Rapids. Every newspaper was in arms against us, and at the present time are selling the cheapest gas—or getting the least price for it—of any other city in the State. I decided that I would have to have some sort of an employees' club. I don't know that I have the only one in the Association, but I would like to tell the members present my experience with our Cedar Rapids club. This did me a great deal of good, and I am like the Salvation Army lass; I want to get some-

body else in too. Immediately upon reaching Cedar Rapids I had a strike on my hands, and had to make some changes in the employees. After getting that settled I had a banquet in our local hotel at which every man employed by the company who could get away – even the stokers in the gas house—were present. There I told them what we expected from them and what we were willing to give in return. When they left there each and every man decided that he was not going to lose his job, and so all started in with new vim and vigor. But upon looking over the class of employees I decided I had to educate them, and with that idea in view I decided to hold employees' meetings. We have in our office an elegant demonstration room, and once a week at first starting at 7:30 P.M., all the employees were invited to come together. At the Company's expense we furnished cigars free of charge. At each meeting I would take up some subject; for instance, at the first one, our relations to the public. I wrote no paper, but just spoke from my standpoint, then invited questions. At the second meeting I gave an idea of what the gas business really is, explaining the work of the fitter, the helper, the new business man, etc. The third meeting subject was the gas meter, and at that meeting, with a piece of apparatus called a projectoscope, I showed photographs out of books and other printed matter upon a screen. We went over the development of the gas meter from its first stages to the present day, comparing the iron meter of to-day with the tin meter, noting the advantages and disadvantages of each. Our meetings usually lasted 2 to 2½ hours, and it would do your heart good to see the men flock to them. We have from 40 to 50 men attending these meetings, and only heard one man say anything against them—he was a Bohemian who lost his job, not because he didn't attend the meeting, rather because he didn't show sufficient interest in the Company. One subject considered concerned the relation of the gasfitter and helper to the new business department. In a week I caught 6 people stealing gas, which is more than some companies catch in 2 years. I made each one of my fitters and helpers connected with my new business department, and the case of a helper at $1.50 a day who can go into a drygoods store and return with an order for 44 arc lights, I think shows the results of education. That is what we have done. We have done a tremendous business in both arc and gas range placings. We are not buying gas ranges by the dozen, but by the carload. I managed to get a number of memberships in Y. M. C. A., at practically no cost to the gas company, and, having been an old athlete myself, I went there once a week and instructed my employees. Nowadays I don't do all the talking at the meetings, but when I get hold of a traveling man who will kindly consent to talk, I bring him in. At one meeting we took up the subject of arc lamps, suitably hanging up 4 of the leading types of lamps. I explained their maintenance and adjustment. Inside of 5 months we put in 800 inverted arc lamps, which I think speaks well. Every one of our men is a booster for the Company, and I would like to see you folks do likewise. Another thing I forgot to mention is the present attitude of the newspapers. I invite the newspaper representatives to come to these meetings, and you would be surprised how the editors come in and absorb what we tell. Newspapers which formerly never had a good word for the Cedar Rapids Gas Light Company, and caused awful prejudice against us on this 90-cent rate fight, are our friends and boosters at the present time. Our slogan is: "We are the public utility that tries to give a square deal."

Mr. Bertke—We have formed an employees' association at Sioux City, of which both the gas and electric department employees are members. We find it is a great advantage to have all the men together, and even though all may not be interested in the questions which we take up, it is a very good place to impress the policy of the company thoroughly upon the members. Ordinarily most of the men do not come in contact with their superiors, so that they can be constantly impressed with the important points.

Mr. Blackwell—We have an organization in the Tri-Cities known as the Tri-City Railway and Light Employees' Association. It is about 1½ or 2 years old. They have regular meetings each month, and a called meeting almost every week. All employees in the gas, electric light and street railway departments are eligible, but very few of the street railway men have entered. After it had been organized for some time it came to be known as the "kindergarten" by some of the more obstinate union men in the electric department, and I learned that the members of the union were instructed not to attend the meetings on the ground that it was a kindergarten. Those fellows were supposed to know it all. Within the last two months, however, I have heard that the members who left had decided to return and may be expected to come back almost any time. Each of the officers has been called upon at various times to speak on certain subjects of interest to the men, and it is very encouraging at their meetings to find between 60 and 70 employees waiting to listen. Even on hot evenings it is wonderful how many turn out. We furnish them quarters lighted and heated free of charge and encourage them in every way possible to hold these meetings. So far we have never invited the newspapers, but I am going to suggest that at the next meeting, because I believe it is an admirable idea.

Mr. Maynard—I am glad this subject of newspaper work has been mentioned, for it gives the patrons of the Company knowledge of an active force at work to better conditions among the employees, which will finally inure to the real advantage of the customers themselves. Another thing. If you awaken in your employees a desire to broaden their knowledge, you will send out every day in that community an influence which comes in direct contact with the people 1,000 times where the heads of the departments will come in contact only once. You will find that your standing in the community is determined in a great measure by the character and influence of your employees.

The President—The next order of general business is reports of committees.

Chairman Kellogg, in response, read the following

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

CLINTON, IOWA, May 25, 1911.

To the Iowa District Gas Association: Gentlemen—Your Committee on President's Address desires to report that it finds in this document matter worthy the earnest study of the members of our Association. Our worthy President calls attention to the benefits of the district organization, and to the extent to which our industry is represented in the field covered by this Association, and we trust his successors may be able to show an even more complete organization of the gas industry in this territory in the coming years. The advantages of solidarity should be apparent to all interested in the industry our organization exists to protect and forward. As respects the commercial and technical ends of our business, your committee agrees with what seems to be the conclusion of the President, that the best technical man is the technical man who duly appreciates the requirements of the commercial end of his industry, and the best commercial man, he who duly appreciates its technical demands and necessities.

The report of the Committee on Uniform System of Accounts, to which our President calls special attention, is one fruitful in practical suggestion for the accounting end of our business, and we recommend it to the careful consideration of our members, and further recommend that the Committee be continued.

Your Committee is in accord with the view expressed in the address, that pernicious, political interference with our business should be resisted by every proper means at our interests' command, and we believe that frank dealing with the community served is one most effective of these means, and this, with the fair and liberal policy on the part of the companies, is bound in time to secure the confidence and support of the communities served. The spirit voiced in the address seems to be that that company serves its own interests best which best serves the public interest.

The address, on the whole, fittingly declares the spirit and the hopes of this Association, and we should thank our worthy President for having so well expressed them. Respectfully submitted,

L. L. KELLOGG, Chairman.
GEORGE MCLEAN.

The report was received and ordered placed on file.

COMMITTEE ON EXHIBITS.

The President appointed as the Committee on Exhibits, at Lincoln, Messrs. Shuff, Martin and Grey.

REPORT ON FINAL RESOLUTIONS.

The President—We are now ready for the report of the Committee on Final Resolutions.

Mr. Blackwell—I believe it is the unanimous opinion of every one present that this convention was most excellently planned and carried out. From a personal standpoint, my attending this convention has put me more in the mind of attending the next one than any other one that I have before attended, either gas or electric; and I believe there are many here of the same opinion. I have heard a great many compliments for the local Company and for Mr. Crawford, personally, as well as for the citizens of Clinton, and the way the local newspapers, the *Herald* and the *Advertiser*, have treated this convention,

ond the cordial reception they have given us. I move you, Mr. President, that we pass a resolution thanking the local Company, the citizens and the newspapers for the cordial treatment we have received, and we should not forget the hard work and the good product that have been secured through the efforts of the Committee on Publishing the Proceedings.

Mr. Martin—I would also suggest that we consider the attentions we have received at the hotel and the interest that the hotel proprietors have taken in this Association during the time that we have been here. [Incorporated by Mr. Blackwell in his motion.] Seconded and adopted.

Mr. Kennedy—I wish to extend a personal invitation to every member here to come to Lincoln next year. I feel, like Mr. Blackwell, that this has been one of the best conventions I ever attended. The local committee here have certainly laid down a good, stiff precedent for us to follow, but it is the Lincoln Company's intention to make the entertainment features of the convention almost as good as those of the Clinton convention.

Mr. Kellogg—We would like to have a little talk from Mr. Crawford.

Mr. Crawford—Mr. President and Gentlemen of the Convention: I feel "greatly and deeply," as Mr. Blackwell says, repaid for all the effort that we have made here. All have told me they had a good time. I hope they have; and I hope sometime you will come again. We will always be glad to entertain the convention again any time you want to come.

The convention thereupon adjourned *sine die*.

Management & Commercial Methods.

FILAMENT IGNITION OF GAS.—Mr. Howard Lyon, of the Experimental Engineering Department of the Welsbach Company, in the latest "Bulletin" of that Company, contributed the following well put together chapter on the subject named in the heading:

History.—It has been well known for about 100 years that platinum has the peculiar power of causing the ignition of combustible gases, and to this power the term "catalytic" action has been applied. Many eminent scientists have investigated this action, and furthered the general knowledge concerning the platinum group of metals. In 1817 Sir Humphrey Davy showed that platinum could be made incandescent by mixtures of hydrogen and oxygen, and that the metal had the peculiar property of condensing oxygen upon its surface. Faraday showed that platinum foil acted in the same way as fine platinum wire; and Liebig prepared finely divided metallic platinum in the form of black powder (platinum black) and showed that it condensed 800 times its volume of oxygen. In the period since coal gas has become a means of illuminating dwellings, many efforts have been made in various parts of the world to utilize the activity of platinum metals in bringing about automatic ignition, and many inventors have taken out patents in various countries on devices employing the principles of platinum ignition. It will be seen from the foregoing that this is by no means a new art. Of the devices which have been invented, it may be said that some have worked briefly, some occasionally, and some showed a reasonable degree of permanence in their action.

Conditions.—Our study has been directed toward the determination of the conditions of positive action, and our effort has been to construct a device that would incorporate the features that have worked favorably, eliminating those that tended toward uncertain results. It has been a study largely of the neglected and obscure corners of the art. We have given attention to the minutest trifles. It seems reasonable that the thing that worked 10, 20 or 50 times could be made to work thousands of times, if only the conditions of favorable action could be definitely controlled.

It seemed very desirable to develop the filament igniter, because of the simplicity of the means and the consequent economy to purchasers of the devices. Furthermore, the store of energy in the form of battery power required to initiate the activity of platinum is very small, thus making possible the incorporation of a small, dry cell within the ornamental shell of the fixture. Finally, renewals of perishable parts can be made at slight cost and inconvenience.

Principle.—The principles involved in the action of igniting devices may be understood by means of a few simple illustrations. If some fine platinum wire, or platinum alloy, is made into the form of a spiral and held in the flame of a bunsen burner, and the gas then turned off and almost immediately turned on again, the wire will glow brightly and may cause the gas to rekindle, especially if the wire is extremely fine.

Fine dust of platinum metals (platinum black) will glow and bring about ignition without previous warming (the basis of the "pill" used in self-lighting mantels), and such metallic black would furnish an ideal agency of ignition if the black retained its active properties. As a matter of fact, each use of the black causes the tiny particles to segregate into larger and larger particles, until the action finally is like that of a visible wire. Further, this fine dust, because of its fineness, is attacked by certain impurities in the gas. For this reason it has seemed best to develop a means of ignition, through the use of fine filaments composed of platinum alloys, and the further discussion in this Bulletin will relate to this type of filament ignition.

Platinum Alloys.—I have referred to platinum alloys, but other metals of the platinum group have the catalytic power of platinum to a more marked degree than platinum itself, and this power, in connection with other efficient properties, makes the incorporation of these metals with platinum very desirable. Among the qualities given by the judicious incorporation of other metals in the alloy filament are:

First—Higher melting point; second, chemical inertness to gas impurities; third, greater catalytic power, thus rendering the filament capable of developing heat with the minimum of applied heat.

Kindling Temperature.—The matters of the kind of metals used in the alloy and the percentage proportion are highly important. In order to bring about ignition of a gas (for example, hydrogen) in air it is necessary to raise the temperature where the ignition is to occur to a perfectly definite point, which is called the kindling temperature. This temperature varies with gases precisely as it varies with soft wood, hard wood and coal. It is well known that the range of kindling temperatures in the materials of a sulphur match is developed successively in the ordinary course of lighting. Friction develops the ignition temperature of phosphorus, and burning phosphorus raises the temperature to the ignition temperature of sulphur, and, finally, the burning sulphur carries the temperature higher still to the kindling temperature of wood.

In making use of a platinum alloy filament for the ignition of illuminating gas, the filament must be heated somehow up to the kindling temperature of the gas most readily ignited. Starting with the temperature of the room, this temperature may be raised by passing an electric current through the filament to the point at which catalytic action occurs; say, 500°. Now, catalytic action begins vigorously and the temperature goes up still higher, say to 1,500°, the kindling point of the mixed gases. If the temperature of the filament could be arrested at this point, all would be well; but the burning gas carries the temperature still higher, and if this should chance to be 2,000 the filament would be melted and thus ruined for future use.

How may the advance of temperature be arrested between 1,500° and 2,000°? Referring to Fig. 1, it is obvious that the first stage of

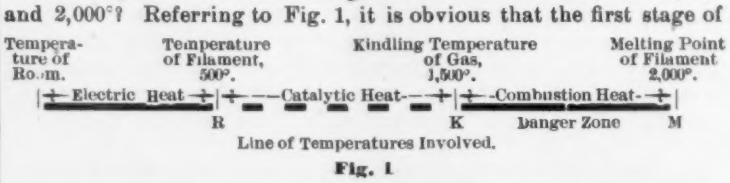


Fig. 1

temperature may be very definitely controlled by selecting a certain type of battery cell—as a dry cell. With a given filament and definite voltage to force a current of electricity through, the heat due to the current will always be the same. The electric heat is only sufficient to initiate catalytic action, and this latter activity will produce sufficient heat to raise the temperature still higher to the kindling temperature of the gas. Finally, the heat due to combustion must somehow be kept down. Evidently the only way to control this combustion heat is to control the quantity of gas that reaches the filament. The method of controlling the quantity of gas that can reach the filament may be understood by reference to Figs. 2 and 3, in which Fig. 2 shows the form of the filament igniter, looking through the lateral openings of the tube, and Fig. 3 the igniter mounted above the crown of a burner, on a nipple riveted to the crown.

Operation.—It may readily be seen that as the gas escapes into the mantle it will be forced up by it buoyancy, and some portion of the gas, mixed with air, will find its way through the crown nipple into the igniting tube, the stream being finally divided by the baffle-plate

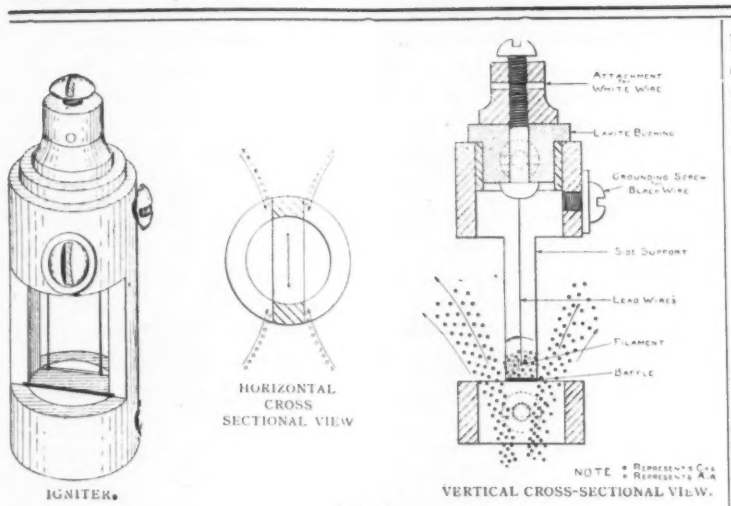


Fig. 2.

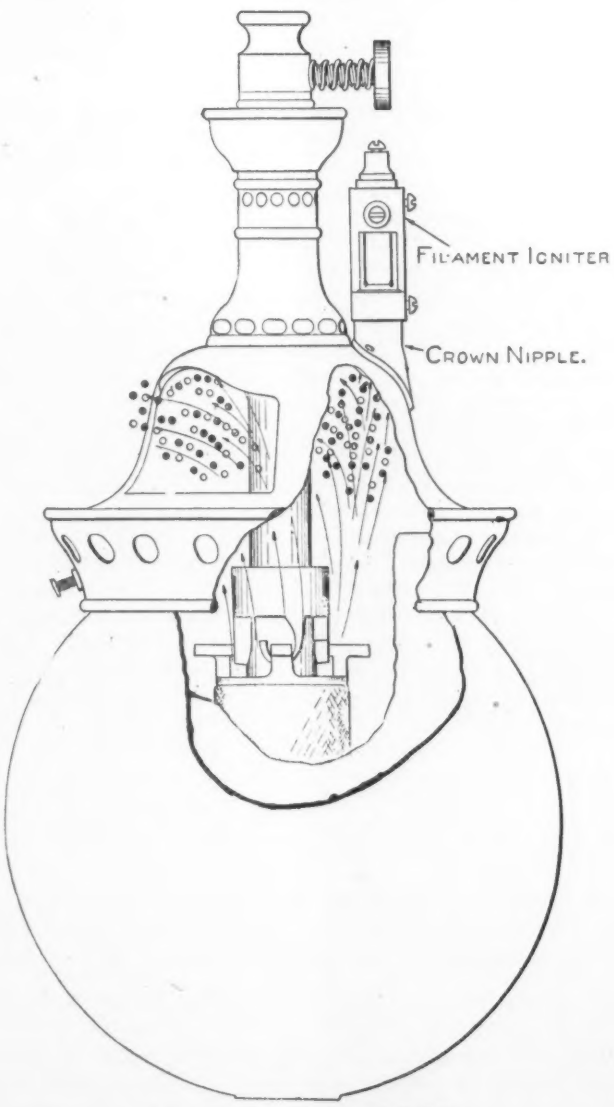


Fig. 3. Note: • Represents Gas. o Represents Air.

(see Fig. 2) and thus escape into the air above the burner. As the two streams of gas rush past the baffle-plate, some molecules of gas will find their way into the space above the baffle and mingle with the air that is being drawn in about the side supports.

If the velocity of the gas streams should differ in any way, this mass of mixed gas would be given a whirling motion that would insure a good mixture, at the same time preventing an excessive accumulation of gas. By this means the quantity of gas finding its way to the filament is kept down to an amount that will insure lighting without endangering the life of the filament at the moment of ignition. Of course, the moment ignition occurs the filament takes only such a temperature as is given by the heated products of combustion issuing from the burner.

The baffle-plate continues to do useful work after ignition by shielding the filament from the direct stream of the hot products of combustion, while the two streams tend to cause an inrush of air indefinitely from the sides. The inrush of air upon a heated wire tends to make it more sensitive to future ignitions, probably by virtue of the power that the platinum metals possess of condensing oxygen upon the surface.

Fig. 4 shows the igniters attached to the burners of a self-contained

Fig. 4.—Two-light Reflexolier with Filament Ignition (No. 1,035), showing removable Battery-cup.

fixture. By pulling the chain a simple mechanism within the shell turns the gas into the burners and at the same time closes the circuit involving the dry battery shown in the cut, and thus the filaments are heated when the gas stream finally reaches the baffle-plate. When the chain is released, the gas continues to flow through the lighted burners and the circuit is automatically broken. It might not be thought that the baffle-plate could serve any marked purpose, but this simple mechanism means a difference between one or two possible ignitions and many thousands, test-after-test having shown its very high efficiency. However, after many thousand ignitions a delicate filament will become distintegrated, but a new one may readily be added to replace it.

Battery Life.—A dry cell will in time become exhausted and may be replaced by unlocking the shell and inserting a new one. While a dry cell will give 100,000 successive ignitions, this does not mean that one dry cell will light a burner two or three times a day for 100 years, for a dry cell will deteriorate in a year or two by simple idleness.

WINDOW-DISPLAYED MODEL KITCHEN.--The latter, of course, meaning an all gas kitchen. The photograph of this kitchen, which is located in the ample show window of the Woonsocket (R. I.) Gas Company, was taken at night during an exposure of 15 minutes, and

Display Window, Woonsocket (R. I.) Gas Company.

at a distance of say 12 feet from the sashes. The lighting-up of the window was obtained from fourteen 40-watt Mazda lamps, with the

assistance of Frink reflectors at the top and front of the window. It was especially dressed for the occasion, to act as a magnet to draw visitors to the cooking demonstrations that were successfully brought off during the dates set for the four demonstration lectures on cooking by gas, the lecturess being Miss Carolyn P. Webber. The "magnet," aided by other instances of clever, persuasive management, was potent enough to fill the assembly hall with the flower of Woonsocket's housekeepers, and it was more than re-proved that lectures of this sort are well worth the money invested therein. It will be noted that that smooth salesman, Mr. I. W. Peffly, managed to have in the window of the kitchen a handsome, well-balanced specimen of the George M. Clark & Company's cabinet ranges, and the truth is the range answered completely every demand tnat was made upon it. That is saying something too, especially when one remembers that Miss Webber had prepared a "menu," some of the numbers whereon were of that nature that, for their preparation to proper advantage, called for an evenness of heat not at all attainable in the use of any heat produced through the combustion of any sort of solid fuel. The whole affair was under the intelligent and forceful supervision of Mr. Alfred Townsend, the Company's well-liked General Manager.

THE W. S. BARSTOW COMPANY'S GAS RANGE CAMPAIGN.—The various Companies managed by Messrs. W. S. Barstow & Co., have about concluded a most successful gas range season. At each plant a special exhibition of gas appliances was made, and in addition, lectures on cooking were delivered. One of the show window displays (Norwich, N. Y.) is shown herewith. We are indebted to Mr. F. Lewis White, Publicity Manager of the Barstow Company, for the foregoing.

A Gas Appliance Display at Norwich, N. Y.

Recent Patent Issues.

Prepared for the AMERICAN GAS LIGHT JOURNAL by ROYAL E. BURNHAM, solicitor of patents and counselor in patent causes, 833 Bond Building, Washington, D. C., from whom illustrations and specifications of any patent mentioned below may be obtained for 10 cents.

995,451. Gas Range. W. N. Goldhammer, St. Louis, Mo.

995,586. Gas Producer. W. B. Chapman, Brooklyn, N. Y., assignor to W. B. Hopping, Trustee, New York City.

995,601. Gasometer. E. Hohmann, Stettin, Germany, assignor to Ofenbau-Gesellschaft M. B. H., Munich, Germany.

995,740. Process for the Manufacture of Incandescent Mantles. J. Visseaux, Lyon, France.

996,382. Process of Making Incandescent Lighting Bodies. O. Wieder hold, Jersey City, N. J.

996,535. Service Pipe for Lighting Systems. J. Stubbers, Covington, Ky., assignor to the Incandescent Light and Stove Company, Cincinnati, O.

996,603. Gas Producer. B. M. Aslakson, Salem, O.

996,628. Gas Producer. R. V. Farnham, Skelmorlie, Scotland.

996,948. Automatic Gas Cut-Off. R. E. Staples, Cambridge, Mass.

997,341. Gas Igniter. O. Thielbeule, Berlin, Germany, assignor to Gas-Laternenfernzuendung System, Dr. Rostin, G.M.B.H., same place.

997,489. Sparking Gas Lighter. D. B. Carmichael, Chicago, Ills.

997,679. Gas Burner Regulator. P. Keller, Chicago, Ills.

997,908. Process of Obtaining Ammonia from Coal. H. L. Doherty, New York City.

997,941. Apparatus for Coking Coal and Producing Gas. H. L. Doherty, New York City.

Items of Interest
FROM VARIOUS LOCALITIES.

AT a meeting of the Directors of the Georgetown (D. C.) Gas Company, held some days ago, it was voted to put the price of gas, in the territory over the line of Rock Creek, at 85 cents per 1,000 cubic feet, the concession to date from the 1st December next. The territory specified includes the settlement of Chevy Chase, Cleveland Park and Friendship; also, those patrons of the Company residing in Montgomery County, Md.

IF some of the sturdy old Dutchmen who sailed the broad waters of the ocean into the bay, the beaches of which end on the outskirts of old Jamaica, Long Island, could awaken and read that the Jamaica Gas Light Company was proposing to construct a modern office building for its needs, what a chorus of "Ja, Ja, Ja's" one would hear. Or, to come down to later days, say two score years ago, what expressions of wonderment would be heard from the lips of the Company's bewhiskered President, "Jake." U. Brinkerhoff, or the surprise of his trusty adjutants, "Lew." M. Jager and stern faced "Ike" Amberman, respectively the Company's Secretary and Treasurer. Then, as now, the graveyard of the old Dutch Reformed Church on Fulton avenue, carried a wealth of brown stone slab grave markings, and the old sheds to the east line of the church, in which the horses that drew the carriages of the farmers for miles around to the quaint structure, are still there; but nothing else much remains. The broad acres that stretched for miles to every point of the compass, no longer show the vegetable wealth that made these Dutchmen (they who settled in this region were mainly Hollanders) rich, are cut into streets lined with modern structures, although here and there are gaps in which may be seen fast decaying types of the Dutch farmhouse, that still are fairly like the picturings that in our boyhood's days were more or less artistically shown on the delft tea dinner and tea sets that graced the tables of early American homes. Surely, Jamaica hath grown great; yes in all things, save the venerable depot of the Long Island Railroad; but that, too, is doomed, for the vast Pennsylvania Company which has succeeded to the original properties, is putting up a great modern structure perhaps a mile distant from the old one. However, the traveller, while he may miss, will not mourn the substitution.

CONGRESSMAN IRA C. COPLEY asserts that the new plant for his associated Illinois Companies, which is to be of the Koppers' type, will be in readiness to operate in a twelvemonth.

THE ordinance now before the Council of Pottsville, Pa., under which it is proposed to authorize an issue of $75,000 of bonds, the proceeds to be devoted to acquiring, for operation on municipal account, the plant of the old Pottsville Gas Company, is in the order of second reading. Should the ordinance become adopted by Council, the voters will pass upon it at the general election to be held in November. The property is now a possession of the Philadelphia and Suburban Gas Company.

THE Muskogee (Okla.) Gas and Electric Company, as to plant, etc., is being reconstructed at an estimated cost of $200,000.

ROBT. J. GRAF, Assistant Secretary of the H. M. Byllesby Company, announces from the Chicago office that these dividends have been paid on the Company's respectively named corporations: Fort Smith (Ark.) Light and Traction Company, 1¾ per cent. on the preferred; and a like amount on the like classification of stock in the Northern States Power Company.

THE proprietors of the Stamford (Conn.) Gas and Electric Company, acting on a resolution of its Directors adopted last year, giving

them authority to issue additional capital stock to the amount of $100,000 at par, allowed the same for sale at par to stockholders of record of June 30th, in the rating of 1 share of new to each 5 shares of old. If the holders of record did not take up same by July 30th, those who wished to take the remainder were then to have a second try. There will be no second try, as the entire amount was immediately subscribed under the initial proposition.

"Frank" Blackstone was recently arraigned in the Boston (Mass.) Municipal Court, charged with having taken the money in the coin boxes of several prepayment meters owned by the local Gas Company. Conviction was secured, and he was sentenced to State prison, there to serve an indeterminate sentence of from 4 to 5 years.

The Watkins (N. Y.) Illuminating and Power Company's possessions were sold at public auction the morning of the 7th inst. The properties were purchased by Messrs. Charles M. Durland and Gus A. Walter, two well-known business men of Watkins, at their joint bid of $2,100. They will revamp the plant, which will surely be the better therefor.

Mr. Charles S. Wood, Chief Accountant for the Peoria (Ills.) Citizen's Gas and Electric Company, has been appointed Treasurer of the city.

The proprietors of the Huntsville (Ala.) Gas Light Company have announced a concession in the net selling rate, which puts it at the figure of $1.40 per 1000.

"B. D. B.," writing from Norfolk Va., under date of the 10th inst., indorses the following: When the appealed civil suit of the Seaboard Air Line Railway vs. the Portsmouth (Va.) Gas Company was heard some days ago, in the court of Hustings, a verdict in favor of defendant was ordered. The action is traceable to the placing of a load of coal on the Company's siding, upper High street, by plaintiff Railway. This coal was consigned to another than the defendant, and was coal of a higher grade than that which had been ordered by defendant. The latter, presuming the material was sent as per direction for delivery by plaintiff, the Gas Company appropriated the same. Therefore the Seaboard folks entered suit for the difference in value of the coal shipped and the coal ordered, with the above result.

An important action was commenced some days ago (damage being put at $7,110) by the Montreal (Can.) Light, Heat and Power Company and the Montreal Gas Company, the basis therefor being damage resulting through interference and negligence by the city in the construction of a sewer under the Company's mains running through a section of Sherbrooke street. The complaints were that during the construction of the sewer injuries of a serious nature were caused to the mains, wherethrough large quantities of gas escaped into the atmosphere, and several lengths of service pipes, on Sherbrook through St. Dennis and St. Lawrence streets had to be relaid.

The Long Island, N. Y., City "Star," recently printed the following: "According to a report made by C. A. Brodek, President of the Progress Society of Far Rockaway, there will be a further reduction for the price of gas in the Rockaways. The reduction will become effective from July 1, but on January 1st, 1912, the price will be further reduced 5 cents, bringing the amount down to $1.15 for 1,000 cubic feet. Mr. Brodek now explains that the reduction is experimental, and will be continued for one year. If at the end of that time, he says, the Company can prove the reduction is practically confiscatory it may apply to the Commission to have the prices increased for both gas and electricity. It is also explained that the reductions affect only that part of the Rockaways which is in Queens Borough. Inwood, Lawrence, Cedarhurst, Woodmere, and other places east of Far Rockaway are outside the jurisdiction of the Public Service Commission for the First District, and the residents there will pay the old prices, unless the Company voluntarily makes the reduction.

The contract for the erection of a water gas apparatus in the plant of the Norwich (Conn.) Gas and Electric Company has been awarded to the Gas Machinery Company, of Cleveland, O. This installation is in the nature of an insurance that the ample gas service heretofore given to the people of Norwich, by Superintendent Bogue's Commissioners, is to be indefinitely maintained.

Another contract that has been gathered in by the firm above named is one from the proprietors of the El Paso (Tex.) Gas and Electric Company, who have authorized the Machinery folks to reset 3 benches of 6's, silica retorts and settings to be installed.

The proprietors of the Shawnee (Okla.) Gas and Electric Company have voted an expenditure of $150,000, which sum will be necessary to put the Company's plant (recently badly damaged by fire) in fit condition for satisfactory work.

Mayor D. B. McKay, of Tampa, Fla., was recently "jacked-up" by the Navy Department, U. S. A., relative to the imperfect lighting of the bridge that spans the Tampa river—it is really an inlet of Tampa Bay—at Lafayette and Fortune streets. In connection with this sort of illumination it may be worth noting here that the requirements are: Red flash lanterns must be hung at east end of draw piers, and each projection shall have a red light placed at each free end as low as practicable. Each pivot pier shall have one red light on each side where the pier is crossed by the axis of the bridge and placed below the floor level of same. Three large lanterns should be placed on top of the draw span, showing red when the bridge is closed, and green when the bridge is open."

The Committee on Light, Richmond (Va.) City Council, has awarded a contract for all the tar produced in the Richmond municipal gas works, for a period of 2 years, to the Armitage Manufacturing Company.

At a meeting of the shareholders of the Bridgeton (N. J.) Gas Light Company, held the 13th inst., the following Directors were elected: Daniel Bacon, Bloomfield H. Minch, Samuel P. Fithian, Wm. C. Mulford and H. A. Jordan. The Directors organized by electing the following executives: President, Daniel Bacon; Vice-President, B. H. Minch; Secretary and Auditor, Wm. C. Mulford, Treasurer and Superintendent, B. F. Harding; Clerk, Jacob B. Jones.

"B. V. W.," writing from Pittsburgh, Pa., under date of the 18th inst., says: "To-day, while going over some letters, I found in one of them some lines respecting the death of an old-timer in the gas coal business. Having failed to note any reference to this happening in the Journal, I though you would like to put the fact on record, as a matter of interest. I refer to the death of Mr. J. H. Metcalf, who passed away, at his home in Penn township, Pa, the morning of June 29th. Deceased was born in Bournemouth, England, May 30th, 1840, and came to America when in his 25th year, and took service with the New York and Cleveland Gas Coal Company, in the employ of which concern he remained for many years. In fact until his retirement from active work about 15 years ago. That his lineage line will be lengthy would seem to be shown from the fact that the survivors number 5 daughters, 2 sons, 26 grandchildren and 6 great grandchildren."

By a vote of 125 to 28 (the ballot having been taken the evening of the 10th inst.), the residents of Reading, Mass., refused to assent to the proposition to appropriate $30,000 for the installation of a gas distributing plant. This action leaves the gas proposition in the standing as it has since the original proposition was made a month ago. So it is likely no main extensions will be carried out, and only those within the zone will be given a supply of gas.

Manager Summers, of the Morris associated gas interests, will restrict himself to week end vacations this summer, a determination forced upon him through the stern necessity arising from the new water gas installation that is being made at the Ithaca (N. Y.) plant.

Mr. Freeman D. Scott has resigned the dual position of General Manager and Superintendent of the Fort Scott (Kans.) Gas and Electic Company to form a partnership with Mr. William McElroy to engage in the business of general contracting. Mr. McElroy is one of the best known men in the named place, having acceptably filled the position of City Engineer to Fort Scott for several terms.

At the annual meeting of the Hadley (Mass.) Gas Company the officers elected were: Directors, E. S. Allen, O. W. Prouty, F. H. Smith, Roy Brayton and F. W. Jennings; President, Elam S. Allen; Vice President, O. W. Prouty; Secretary and Treasurer, F. H. Smith The annual reports showed that the Company had completely overcome the listless business of the last 3 years, and that operations for the past twelvemouth showed an income on the investment amounting to virtually 5 per cent.

Governor Foss, of Massachusetts, among his appointments recently made, recommended the names of Mr. Charles D. Jenkins and of Leslie R. Moore and Lawrence S. James, to succeed themselves respectively as Inspector and Assistant Inspectors of Gas and Gas Meters for the State. He also recommended that Gen. Morris Schaff be reappointed as a member of the State Board of Gas and Electric Light Commissioners. The nominations were subsequently confirmed.

The Public Service Commission (Second New York District) has assented to the petition which prayed for the merging of the Auburn Light, Heat and Power Company, the Auburn Gas Company and the allied plants of Geneva, that are supplying light, heat and power to the residents of Geneva, Waterloo and Seneca Falls. The Empire Gas and Electric Company is to be the title of the succeeding corporation, and specifies that the eventual capitalization thereof may consist of $900,000 capital stock, and $5,000,000 joint first 5 per cent. bonds.

The Market for Gas Securities.

Consolidated gas is up a point and a half for the week—think of it! The opening today (Friday) was 146¾ bid.

Messrs. Merrill, Oldham & Co., and Jas. A. Hutchinson & Co., two well-known financial firms of Boston, have purchased the entire new bond issue ($600,000, first and refunding) by the Central Hudson (N. Y.) Gas and Electric Company. The issue matures in 1941. Washington (D. C.) gas sold at 448 during the week. The Directors of the Hamilton (O.) Gas and Electric Company will meet in special session the 15th prox., to devise some way of straightening out the present bond tangle. The meeting will be held in 158 Third street, Cincinnati, on the date named.

Gas Stocks

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

115 BROADWAY, NEW YORK CITY.

JULY 24.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked*
Consolidated Gas Co.	$78,177,000	100	146¾	147
Central Union Gas Co.—				
1st 5's, due 1972, J. & J.	3,000,000	1,000	103	105
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	115	118
Mutual Gas Co.	3,500,000	100	155	165
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	100	101½
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	35	50
1st Mtg. Gold Bds. 5 p. ct.	1,000,000	—	98½	100½
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	103	105
Con. 5's, due 1945, J. & J.	1,500,000	—	95	100
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	94	100
Standard	5,000,000	100	50	70
Preferred	5,000,000	100	70	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	103	105
The Brooklyn Union	15,000,000	1,000	142½	145
1st Con. 5's, due 1948, M. & N.	15,000,000	—	106¾	107
Yonkers	299,640	500	130	—
Out-of-Town Companies.				
Bay State	50,000,000	50	¾	½
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	—
" 1st Mtg. 5's	500,000	1,000	95	100
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	50	60
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed Gold Bonds	7,660,000	1,000	104	106¼
Cincinnati Gas and Electric Co.	29,500,000	100	92	93
Columbus (O.) Gas Co., 1st Mortgage Bonds	1,500,000	1,000	96	98
Columbus (O.) Gas Lt. & Heating Co.	1,682,750	100	90½	91
Preferred	3,036,500	100	75½	80
Consumers, Toronto	2,000,000	50	200	204
Consolidated, Baltimore	13,463,784	100	106½	—
Mortgages, 5's	3,490,000	—	89	100
Chesapeake, 1st 6's	1,000,000	—	—	—
Equitable, 1st 6's	910,000	—	—	—
Consolidated, 1st 5's	1,490,000	—	—	112
Consolidated Gas Co. of N. J.	1,000,000	100	15	—
Con. Mtg. 5's	976,000	1,000	92	95
Bonds	75,000	—	—	100
Denver Gas and Electric	3,500,000	—	102	105
Detroit City Gas Co.	6,580,000	—	—	50
" Prior Lien 5's	5,619,000	1,000	97	100½
Detroit Gas Co., 5's	381,000	1,000	75	80
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	—	101
Essex and Hudson Gas Co.	6,500,000	—	39	40
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co., 1st Mtg. 5's	1,350,000	1,000	100	101
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	—	112	113½
" Bonds, 5's	10,500,000	—	103	103½
Indianapolis	2,000,000	—	78	83
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	82	—
" 1st Mtg. 5's	250,000	1,000	97	100
Kansas City Gas Light Co., of Missouri	5,000,000	100	—	86
Bonds, 1st 5's	3,822,000	1,000	102	104
Laclede Gas Co., St. Louis.	10,000,000	100	107¾	108
Preferred	2,500,000	100	94½	102
Bonds	10,000,000	1,000	102½	103
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	143	145
Madison Gas and Electric Co.				
" 1st Mtg. 6's	400,000	1,000	106	108¾
Massachusetts Gas Companies, of Boston	25,000,000	100	95	95½
Preferred	25,000,000	100	95¼	96
Montreal Gas Co., Canada	2,000,000	100	218	218¾
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	56	58
Bonds, 6's	6,000,000	—	137	138
New Haven Gas Co.	2,000,000	25	200	—
Peoples Gas Lt. & Coke Co., Chicago	25,000,000	100	106	107
1st Mortgage	20,100,000	1,000	—	—
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¾	105½
San Francisco Gas Co., Cal.	15,500,000	—	—	—
St. Joseph Gas Co.—				
1st Mtg. 5's	1,000,000	1,000	100	102
St. Paul Gas Light Co.	2,500,000	100	—	—
1st Mortgages, 6's	650,000	1,000	104	108
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	3,447,000	1,000	97	98
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	101	103
Washington (D. C.) Gas Co.	1,000,000	200	442	444
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	861	—

MEETING TIMES OF THE VARIOUS GAS ASSOCIATIONS.

American Gas Institute.—Annual meeting, October 18, 19, 20, 21, 1911. St. Louis, Mo. Officers: President, Donald McDonald, Louisville, Ky. Secretary, A. B. Beadle, 29 West 39th st., N. Y. City.

Canadian Gas Association.—Annual meeting, ———— Officers President, Arthur Hewitt, Toronto, Ont.; Secretary and Treasurer, John Keillor, Hamilton, Ont.

Empire State Gas and Electric Association.—Annual meeting, Nov., 1911. New York City. Officers: President, M. J. Brayton, Utica, N. Y.; Secretary, C. H. B. Chapin, 29 W. 39th street. New York City.

Guild of Gas Managers of New England.—Annual meeting, March, 1912. Young's Hotel, Boston; monthly meeting, second Saturday. Officers: President, Walter G. Africa, Manchester, N. H.; Secretary, H. K. Morrison, Brockton, Mass.

Illinois Gas Association.—Annual meeting, time, March, 1912, Chicago, Ills. Officers: President, C. B. Strohn, Elgin, Ills.; Secretary-Treasurer, F. E Newberry, Dixon, Ills.

Illuminating Engineering Society.—Annual meeting, Sept. 25, 26, 27, 1911, Chicago, Ills. Meetings of Sections, monthly. Pres't, A. E. Kennelly, Boston, Mass.; Secretary, Preston S. Millar, 29 W. 39th street, N. Y. City. Sections: New York, Secretary, Albert J. Marshall, 36 West 39th street. New England, Secretary, W. S. Farrow, 1240 Massachusetts avenue, Cambridge, Mass. Philadelphia, Secretary, S. B. Eichengreen, Broad and Arch streets. Chicago, Secretary, F. H. Bernhard, Marquette Building.

Indiana Gas Association.—Annual meeting, Jan. 17 and 18, 1912, Indianapolis. Officers: President, S. E. Mulholland, Fort Wayne; Vice-President, Howard L. Olds, Indianapolis; Secretary-Treasurer, Philmer Eves, Indianapolis.

Iowa District Gas Association.—Annual meeting, time, May, ——, 1912; Clinton, Ia, Officers: President, G. W. Clabaugh, Omaha, Neb.; Secretary and Treasurer, G. I. Vincent, Des Moines, Ia.

Kansas Gas, Water and Electric Light Association.—Annual meeting, time, ———— Wichita, Kas. Officers: President, W. A. Scothorn, Hutchinson, Kas.; Secretary and Treasurer, J. D. Nicholson, Newton, Kas.

Michigan Gas Association—Annual meeting, time, Sept. 20, 21, 22, 1911; Detroit, Mich. Officers: President, A. P. Ewing, Detroit, Mich.; Secretary-Treasurer, Glenn R. Chamberlain, Grand Rapids, Mich.

Missouri Electric Light, Gas, Water Works and Street Railway Association.—Annual meeting, April, 1912; St. Louis, Mo. Officers: President, F. E. Murray, Louisiana, Mo.; Secretary and Treasurer, N. J. Cunningham, Springfield, Mo.

National Commercial Gas Association.—Annual meeting, October 23-28, 1911. Denver, Officers: President, C. N. Stannard, Denver; Secretary, Louis Stotz, 39 West 39th street, New York City.

Natural Gas Association.—Annual meeting, May, 1912, Kansas City, Mo.; Officers: President, A, B. Macbeth, Independence, Kas. Secretary, T. C. Jones, Delaware, O.

New England Gas Association.—Annual meeting, third Wednesday in February, 1912; Boston. Officers: President, J. A. Coffin, Gloucester, Mass.; Secretary-Treasurer, N. W. Gifford, East Boston, Mass.

New Jersey State Gas Association.—President, William H. Pettes, Newark, N. J.; Secretary-Treasurer, Arthur H. Osborn, Belmar, N. J.

Ohio Gas Association —President, John M. Garard, Columbus, O.; Secretary-Treasurer T. C. Jones, Delaware, O.

Pacific Coast Gas Association.—Annual meeting, Sept. 20, 21 and 22, 1911, Oakland, Cal. Officers: President, F. A. Leach, Jr., Oakland, Cal.; Vice President, W. Baurhyte, Los Angeles, Cal.; Secretary-Treasurer, John A. Britton, 445 Sutter street, San Francisco, Cal.

Pennsylvania Gas Association.—Annual meeting, April, 1912, Williamsport, Pa. Officers President, C. W. Butterworth, Millon, Pa; Secretary-Treasurer, William H. Merritt. Lebanon, Pa.

Society of Gas Lighting.—Annual meeting, December, 1911; monthly meeting, second Thursday. Place, New York City. Officers: President, Fred. S. Benson; Secretary, George G. Ramsdell, 254 West 89th street, New York city.

Southern Gas Association.—Annual meeting, April, 1912, Jacksonville, Fla. Officers: President, H. B. Hoyt, Jacksonville, Fla.; Secretary-Treasurer, E D. Brewer, Atlanta, Ga.

Southwestern Electrical and Gas Association.—Annual meeting. April 27, 28, 29, 1912; Houston, Tex. Officers: President, J E. Carroll, Beaumont, Tex.; Secretary, D. G Fisher, Dallas, Tex.

Wisconsin Gas Association.—Annual meeting, May 15 and 16, 1912, Milwaukee, Wis Officers: President, H. M, Buck, Waukesha, Wis.; Secretary-Treasurer, Henry Harmon. Milwaukee, Wis.